

Elserfuhr 9998.2-HCL
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AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended)

1. Synthetic enzymes A synthetic enzyme for the production of coniferyl alcohol, coniferaldehyde, ferulic acid, vanillin and vanillic acid from eugenol.

Claim 2 (currently amended)

2. Synthetic enzymes A synthetic enzyme according to claim 1 selected from the group comprising: a) eugenol hydroxylase, b) coniferyl alcohol dehydrogenase, c) coniferaldehyde dehydrogenase, d) ferulic acid deacylase and e) vanillin dehydrogenase.

Claim 3 (currently amended)

3. DNA coding for the enzymes enzyme according to claim 1 as well as partial sequences and functional equivalents thereof.

Claim 4 (currently amended)

4. Cosmid clones clone containing the DNA according to claim 3.

Claim 5 (currently amended)

5. Vectors Vector containing the DNA according to claim 3.

Claim 6 (currently amended)

6. Microorganisms Microorganism transformed with the DNA according to claim 3.

Claim 7 (currently amended)

7. The use of the DNA according to claim 3 for the transformation of microorganisms A method of transforming a microorganism comprising inserting DNA, partial sequences of DNA or functional equivalents thereof which code for an enzyme selected from the group consisting of eugenol hydroxylase, coniferyl alcohol dehydrogenase, coniferaldehyde dehydrogenase, ferulic acid deacylase and vanillin dehydrogenase.

Claim 8 (currently amended)

8. The use of A method of producing microorganisms according to claim 6 for the production of coniferyl alcohol, coniferaldehyde, ferulic acid, vanillin and vanillic acid comprising subjecting eugenol to one

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or more of the microorganisms of claim 6.

Claim 9 (currently amended)

9. A process for the production of coniferyl alcohol from eugenol, characterised in that wherein the reaction is carried out in the presence of eugenol hydroxylase.

Claim 10 (currently amended)

10. A process for the production of coniferylaldehyde from coniferyl alcohol, characterised in that wherein the reaction is carried out in the presence of coniferyl alcohol dehydrogenase.

Claim 11 (currently amended)

11. A process for the production of ferulic acid from coniferylaldehyde, characterised in that wherein the reaction is carried out in the presence of coniferylaldehyde dehydrogenase.

Claim 12 (currently amended)

12. A process for the production of vanillin from ferulic acid, characterised in that wherein the reaction is carried out in the presence of ferulic acid deacylase.

Claim 13 (currently amended)

13. A process for the production of vanillic acid from vanillin, characterised in that wherein the reaction is carried out in the presence of vanillin dehydrogenase.